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THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY, DIVISION OF MYCOLOGY AND DISEASE SURVEY
BUREAU OF PLANT INDUSTRY, UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXVI August 15, 1942 Number 15

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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CHECK LIST REVISION

Freeman Weiss

SAMANEA (LEGUMINOSAE)

SAMANEA SAMAN Merrill, RAIN-TREE, SAMAN. Large tree of West Indies and C. America, grown for ornament.

Heterodera marioni (Cornu) Goodey, root knot. Fla.
Hypomyces haematococcus (Berk. & Br.) Wr., on bark. T. H.
Micorstroma pithecolobii Lamkey, leaf spot. P. R.

SAMBUCUS (CAPRIFOLIACEAE)

SAMBUCUS CAERULEA Raf., BLUEBERRY ELDER, including var. VELUTINA (Durand) Schwer., VELVETLEAF ELDER. Large shrub or small tree of Growth Regions 1,2,4,5,6,7,8,9,11,12,13, 14; cult. for ornament, Zone V, and furnishes food for wild life.

Cercosporella prolificans (Ell. & Holw.) Sacc., leaf spot. Calif., Oreg., Alaska.
Coryneum sambucinum Ell. & Ev., on branches. Colo., Nev.
Cytospora chrysosperma Pers. ex Fr., cankér, dieback. Wash. Conidial stage of Valsa sordida.
Diaporthe sociabilis Nits. var. sambuci (Ell. & Ev.) Wehmeyer, on branches. Wash.
Exosporium sambuci Tracy & Earle, on branches. Wash.
Fomes igniarius (L. ex Fr.) Kickx, heart rot. Idaho.
Hendersonia diplodioides Ell. & Ev., on branches. Utah, Wash.
Hymenochaete agglutinans Ell. & H. rubiginosa (Schrad. ex Fr.) Lév., trunk rot. Wyo.
Leptosphaeria sambuci Fautr., on branches. Oregon.
Nectria cinnabarina Tode ex Fr. (N. sambuci Ell. & Ev.), canker, dieback. Idaho, Nebr., Wash.
N. coccinea Pers. ex Fr. Idaho.
Phyllosticta sambuci Desm., leaf spot. Mont.
Polyporus spp., wood rot (probably saprophytic). Spp. reported include P. caesius Schrad. ex Fr., Calif., Oregon; P. chioneus Fr., Wash.; P. picipes Fr., Wash.; P. planellus (Murr.) Overh., Idaho; P. versicolor L. ex Fr., Wash.
Ramularia glauca Ell. & Ev., leaf spot. Calif.
R. sambucina Sacc. Calif., Wash.
Septoria sambucina Pk., leaf spot. Calif., Oregon, Wash.
Sphaeropsis sambucina (Cke.) Sacc., on branches. Calif., Mont.
Stereum purpureum Pers., wood rot. Calif.

SAMBUCUS -- continued.

SAMBUCUS CANADENSIS L., AMERICAN ELDER. Large shrub occurring throughout the Eastern and Central States; grown for ornament and edible fruit, Zone III. Forms with vari-colored fruit and dissected leaves are in cult. Also SAMBUCUS MELANOCARPA Gray, BLACKBEAD ELDER of Growth Regions 4, 9, 10, 12, 13 & 14; cult. Zone V.

Ascochyta wisconsina Davis, leaf spot. N. Y., Wis.
Botryosphaeria ribis (Tode ex Fr.) Gross. & Dug. and var. chromogena Shear et al., on branches. Fla., Ga.
Cercospora catenospora Atk., leaf spot. Ala., Kans., Miss., N. Car., Texas.
C. depazeoides (Desm.) Sacc. Me. to Ala., Kans. & Wis.
Cercosporella prolificans (Ell. & Ev.) Sacc., leaf spot. N. Mex.
Coryneum sambucinum Ell. & Ev., on branches. Colo.
Cryptospora pulviniceps (Pk.) Sacc., on branches. N. Y.
Cytospora sambucicola Tehon & Stout, branch canker. Ill.
C. sambucina Ell. & Barth., on branches. Kans., N. Y.
Diaporthe megalospora Ell. & Ev., on branches. Ga., Mass., N. Y.
D. sociabilis Nits. var. sambuci (Ell. & Ev.) Wehmeyer, Ga., La., Mich.
Diplodia spp., on branches, ? canker & dieback. Spp. reported include D. natalensis Pole-Evans, Ala., Texas; D. paupercula Berk. & Br., N. Y.; D. sambuci Tehon & Daniels, Ill.; D. sambucina Sacc., N. Y.
Diplodina deformis (Karst.) Sacc., on twigs. Wash.
(Dothidea sambuci Pers. ex Fr.): Systremma natans.
Dothiorella macrospora (Berk. & Curt.) Sacc., on branches. Mich., Pa.
Exosporium sambuci Tracy & Earle, on dead branches. Colo.
Gloeosporium tineum Sacc., on leaves. Miss., Texas.
Glomerella cingulata (Ston.) Spauld. & Schrenk, on branches. La.
Haplosporella sambuci (Pk.) Petr., on branches, ? canker. Ind., N. Y., N. Dak.
Helicobasidium purpureum (Tul.) Pat., root rot. Texas.
Heterosporium sambuci Earle, on dead branches. Ala.
Lasmeniella alpina (Ell. & Ev.) Petr. & Syd., on branches. Colo.
Leptosphaeria sambucina Ell. & Ev., on branches. Colo.
Leptothyrium pomi (Mont. & Fr.) Sacc., on twigs. Va.
Microsphaera alni DC. ex Wint., M. grossulariae Wallr. ex Lév., powdery mildew. Widespread. The latter sp. is more frequently reported.
Nectria cinnabarina Tode ex Fr., twig canker, dieback. Widespread.
N. coccinea Pers. ex Fr., canker. Md., Mich., Wash.
Phomopsis sp., on twigs. Idaho.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Mich.
Phyllosticta sambuci Desm., leaf spot. Ind., N. Y., Pa., W. Va., Wis.

SAMBUCUS CANADENSIS -- continued.
Phyllosticta sambucicola Kalchbr. Ind.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora fusca N. E. Stevens and P. rhodina (Berk. & Curt.) Cke., on branches. N. Y.
Puccinia bolleyana Sacc., rust (O, I). Me. to Fla., Texas & Minn. II & III on Carex spp.
Ramularia sambucina Sacc., leaf spot. Mo., N. Y.
Septoria sambucina Pk., leaf spot. Vt. to Fla., Texas & Wis.
(Sphaeropsis sambuci Pk.): Haplosporella sambuci.
S. sambucina (Cke.) Sacc., on branches, ? canker. Kans.
(Possibly the same as Lasmeniella (Haplosporella) alpina.)
Sphaerulina sambucina Pk., on branches. N. Y.
Systremma natans Tode ex Theiss. & Syd., on branches. N. Y.
Xylaria ? multiplex Kze., root rot. Texas.

Mosaic, suspected virus. Fla., Pa.

SAMBUCUS NIGRA L., EUROPEAN ELDER. Large shrub or small tree of Europe, cult. for fruit and ornament, Zone V.
Ascochyta sambuci Sacc., leaf spot. Alaska.
Botryosphaeria ribis (Tode ex Fr.) Gross. & Dug., on branches. Ga.
Cercospora depazeoides (Desm.) Sacc., leaf spot. Iowa, Me.
Puccinia bolleyana Sacc., rust (O, I). Mass.
Sphaeropsis sambucina (Cke.) Sacc., on branches. Calif.

SAMBUCUS PUBENS Michx. (S. racemosa auths. not L.), SCARLET ELDER. Large shrub of Growth Regions 15, 21, 22, 23, 24, 26, 27, 28; cult. for ornament in several hort. vars., Zone IV. Including S. CALLICARPA Greene, PACIFIC ELDER, of G. R.'s 1, 2 & 4.
Ascochyta wisconsina Davis, leaf spot. Wis.
Cercospora lateritia Ell. & Hals., leaf spot. Iowa.
C. depazeoides (Desm.) Sacc. Wash.
Cryptodiaporthe calosphaerioides (Ell. & Ev.) Wehmeyer, on branches. Alaska.
Diaporthe sociabilis Nits. var. sambuci (Ell. & Ev.) Wehmeyer, on branches. Wash. (D. callicarpae Pk.)
Diplodia pauperdula Berk. & Br., on branches. Va.
Hendersonia pubentis Cke., on branches. N. Y.
Microsphaera grossulariae Wallr. ex Lév., powdery mildew. Vt. to Pa. & Wis.
Nectria cinnabarina Tode ex Fr., canker, dieback. Alaska, Calif., Va.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Puccinia bolleyana Sacc., rust (O, I). Mass. to Ind. & Mich.
Ramularia sambucina Sacc., leaf spot. N. Mex., N. Y., Pa., Wis.
Septoria sambucina Pk., leaf spot. Calif., Wash., Wis.

SAMBUCUS, unnamed spp.
Corticium microsclerotia Weber, web blight. Fla. On S. simpsonii Rehd.
C. stevensii Burt, thread blight. La.
Daedalea unicolor Bull. ex Fr., on trunks. Wis.
Dendrophoma sambuci (Berk. & Curt.) Sacc., on branches. Me.
Fomes scutellatus Schw. ex Cke., on trunks. Md.
Hymenochaete agglutinans Ell., on trunks. Wyo.
Mycosphaerella sp., leaf spot. N. Mex.
Myxosporium sp., on twigs. Wash.
Physalospora obtusa (Schw.) Cke., on branches. Ala., N. Y., Va.
Sphaerotheca humuli DC. ex Burr., powdery mildew. Mass.
Thyronectria sambucina Ell. & Ev., on dead branches. Colo.
Verticillium albo-atrum Reinke & Berth., wilt. Md.

Leaf curl, mite (Eriophyes sp.). N. Y., Tenn.

SAPINDUS (SAPINDACEAE)

SAPINDUS DRUMMONDII Hook. & Arn., WESTERN SOAPBERRY. Deciduous shrub or small tree of Growth Regions 11, 16, 17, 19, 20, 22, 25, 29, 30. Including S. MARGINATUS Willd., FLORIDA SOAPBERRY. Both spp. grown for ornament, Zone V.
Cylindrosporium griseum Heald & Wolf, leaf blight. Okla., Texas.
Glomerella cingulata (Ston.) Spauld. & Schrenk (Colletotrichum gloeosporioides Penz.), leaf spot, dieback. Texas.
Helicobasidium purpureum (Tul.) Pat., root rot. Texas.
Mycosphaerella sapindi (Ell. & Ev.) Lindau, leaf spot. Mo.
Phoradendron flavescens (Pursh) Nutt. and var. macrophyllum Engelm., mistletoe. Ariz., N. Mex., Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Okla., Texas. (Reported resistant.)
Uncinula circinata Cke. & Pk., powdery mildew. Texas.

Mosaic, suspected virus. Texas.

SAPINDUS SAPONARIA L., SOUTHERN SOAPBERRY. Evergreen tree of tropical America, grown for ornament and production of saponion (in fruits); including S. MUKOROSII Gaertn. var. CARINATUS Radlk., CHINESE SOAPBERRY, S.E. Asia, cult. in Zone VII.
Corticium stevensii Burt, thread blight. Fla.
Glomerella cingulata (Ston.) Spauld. & Schrenk, leaf spot, dieback. Fla.
Meliola sapindacearum Speg. and M. sapindii F. L. Stevens, black mildew. Canal Zone, P. R.
Phyllosticta sapindi P. Henn., leaf spot. Fla.

SAPIUM (EUPHORBIACEAE)

SAPIUM SEBIFERUM Roxb., CHINESE TALLOWTREE. Small tree of China, cult. for ornament and wax, Zone VII, and locally naturalized in the Gulf States.
Cercospora stillingiae Ell. & Ev., leaf spot. La.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Phyllosticta stillingiae Ell. & Ev., leaf spot. La.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.

SARCOBATUS (CHENOPODIACEAE)

SARCOBATUS VERMICULATUS (Hook.) Torr., GREASEWOOD. Shrub characteristic of alkaline soil areas of Growth Regions 6, 7, 8, 9, 10, 11, 12, 15; furnishes wood and is sometimes grown for ornament, Zone V.
Hendersonia heterophragmia Ell. & Ev., on twigs. Mont.
Puccinia aristidae Tracy, rust (O, I). Nebr. to Calif. and Wash.
II and III on Aristida and other grasses.
P. luxuriosa Syd., rust (O, I). Mont. to Ariz., Calif. and Oregon.
II and III on Sporobolus airoides.
Septoria sarcobati Dearn. & Barth., on involucres. Mont.
Stereum purpureum Pers., on branches. Calif.

SASSAFRAS (LAURACEAE)

SASSAFRAS ALBIDUM (Nutt.) Nees, SASSAFRAS. Shrub to small or large tree of Growth Regions 20, 22, 23, 24, 25, 26, 27, 28, 29, 30; grown for wood and ornament, Zone IV.
Actinothyrium gloeosporioides Tehon, leaf spot. Ill.
Apioporthe corni Wehmeyer, on dead twigs. Pa.
Armillaria mellea Vahl. ex Fr., root rot. Pa.
Cryptovalsa sassafras (Ell. & Ev.) Berl., on branches. N. J.
Cytospora sassafras Ell. & Ev., on twigs. Mich., N. Y., W. Va.
C. sassafrasicola Tehon & Daniels. Ill.
Daedalea confragosa Bolt. ex Fr., trunk rot. Ind., N. Y.
Daldinia vernicosa (Schw.) Ces. & De Not., wood rot. Ga., Va.
Diaporthe biglobosa (Cke. & Ell.) Sacc., on branches. N. J.
D. pardalota (Mont.) Fckl. (D. sassafras Dearn. & House). N. Y.
Diplodia spp., on twigs & branches, associated with cankers & dieback. Spp. reported include D. officinalis Ell. & Ev., Mich., N. Y.; D. sassafras Tracy & Earle, Miss.; D. subcuticularis Dearn. & House, N. Y.
Diplopeltis sassafrasicola Tehon & Stout, on leaves. Ill.
Fomes igniarius (L. ex Fr.) Kickx, white heart rot. Ohio, Va.
F. ribis (Schum. ex Fr.) Cke., red heart rot. Mo.
Gloeodes pomigena (Schw.) Colby, on twigs. Ind.

SASSAFRAS ALBIDUM -- continued.

Gnomonia sassafras Ell. & Ev., on leaves. N. J., Ohio.
Griphosphaeria corticola (Fckl.) Höhn., on branches. N. J.
Hymenochaete agglutinans Ell., wood rot. Va.
Hypoxylon spp., especially H. sassafras (Schw. ex Fr.) Berk., wood rot. N. Y. to Ga. & Mo.
Leptothyrium kellermanii Bubák, on leaves. Ohio. (Spermatial stage of Mycosphaerella sassafras ?)
Metasphaeria sassafrasicola Tehon & Stout, on leaves. Ill.
Mycosphaerella sassafras (Ell. & Ev.) Bubák & Kabát, on leaves. N. Y. to Ga. and Kans.
Nectria sp., (? galligena Bres.), branch & trunk canker. Conn. to W. Va.
N. verrucosa (Schw.) Sacc., on branches. Pa.
Nummularia microplaca (Berk. & Curt.) Cke., on branches. Md. to Ala. & Ind.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Texas.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Mich.
Phyllosticta illinoensis Tehon & Daniels, leaf spot. Ill., Mass.
P. sassafras Cke., leaf spot. N. Y. to Ga., Texas and Ill.
Physalospora obtusa (Schw.) Cke., on branches, ? canker & dieback. N. Y. to Ga. and Miss.
P. fusca N. E. Stevens and P. rhodina (Berk. & Curt.) Cke., on branches. Ala.
Polyporus spp., wood rot, sometimes on living trees. P. gilvus Schw. ex Fr., Ind., La.,Md.; P. hirsutus Wulf. ex Fr., Ind., N. Car.; P. versicolor L. ex Fr., Ind., Md., Va.
Poria ferruginosa (Schrad. ex Fr.) Cke., wood rot.
Pseudodictya sassafrasicola Tehon & Stout, on leaves. Ill.
Schizophyllum commune Fr., wood rot. Pa., Va.
Septoria sp., leaf spot. N. Y.
Sphaeropsis spp., on branches, sometimes associated with cankers and dieback. Occasional, N. Y. to Ala. & Mo. (Probably the conidial stage of Physalospora spp., as S. seriata Pk. and S. punctata Dearn. & House = P. obtusa. S. sassafras Cke. & Ell. is distinct, though probably not a Sphaeropsis).
Stigmatophragmia sassafrasicola Tehon & Stout, on leaves. Ill.
Trametes sepium Berk., wood rot. Ind.
Valsa spp., on branches, probably saprophytic and none connected definitely with the Cytospora spp. listed. Spp. reported include V. ceratophora Tul., N. J.; V. laurina Cke. & Ell., N. J.; V. subclypeata Cke. & Pk., N. Y., Va.
Valsaria nigrofacta (Cke. & Ell.) Sacc. N. J.

Mosaic, suspected virus. N. Y.
Yellows, suspected virus. Texas.

(DIVISION OF MYCOLOGY AND DISEASE SURVEY).

INCIDENCE OF EAR ROTS IN THE 1941 CORN CROP

Neil E. Stevens

Evidence derived from reports of licensed inspections at terminal markets indicates that on the whole in the commercial corn crop of 1941, there was slightly less loss from ear rots than in the previous year; although these losses were much greater than in the crops of 1938 and 1939. In a few States, notably Illinois, losses seem to have been much greater in 1941 than in any other recent year.

Ear Rots in Corn at Terminal Markets. The results of licensed inspections of shelled corn received at various terminals during June 1942 were made available, as in previous years, through the courtesy of the Grain, Feed, and Seed Branch, Agricultural Marketing Administration, U. S. Department of Agriculture. The method of assembling information, and the reasons for considering total damage in June receipts a fairly reliable index of losses due to ear rots in the corn crop of the previous season, were explained in earlier reports (PDR 19:71-93 and 20:63-71, 316-320).

On the map, Figure 1, A, are shown all the markets receiving over 50 cars of shelled corn during June, 1942. It is recognized that markets such as Chicago and Buffalo may receive shipments from a wide area. The figures indicate the percentage of cars of shelled corn with 5% or over "total damage" received during the month at Buffalo, New York; Toledo, Mansfield, Circleville, Ohio; Louisville, Owensboro, Kentucky; Nashville, Tennessee; Birmingham, Alabama; Indianapolis, Terre Haute, Indiana; Chicago, Peoria, Decatur, Champaign, East St. Louis, Illinois; Milwaukee, Superior, Wisconsin; Duluth, Minneapolis, Minnesota; Cedar-Rapids, Clinton, Keokuk, Sioux City, Iowa; St. Louis, St. Joseph, Kansas City, Missouri; Omaha, Lincoln, Nebraska; Kansas City, Topeka, Kansas; and Denver, Colorado.

The average percentage of cars having 5% or over total damage for all those terminals is 20, as compared to 23 for the previous year, and in sharp contrast with an average of 2.8% for all the markets reporting on the 1939 crop (Fig.2).

Losses From Corn Ear Rots in Illinois. There is abundant evidence that losses from corn ear rots were unusually high in Illinois in 1941. In the report of the Corn Performance Tests[1] it is stated that, "In 1941 ear rots caused more damage in Illinois than in any year since 1934. Widespread and severe kernel damage occurred on ten of the twelve test fields. Only Greenfield and Modoc, in the southwestern area of the State, escaped unusual damage." The contrast between the 2 years just past is evident from the fact that the average kernel damage from rot on all 12 of the Corn Performance Test fields was 4.94% in 1941 and 2.57% in 1940. The difference in the distribution of losses within the State is shown in Figures 3 and 4.

1/ Copper, R. R., G. H. Dungan, A. L. Lang, J. H. Bigger, Benjamin Koehler, and Oren Bolin; Illinois corn performance tests, 1941. Illinois Agr. Exp. Stat. Bul. 482, p. 480.

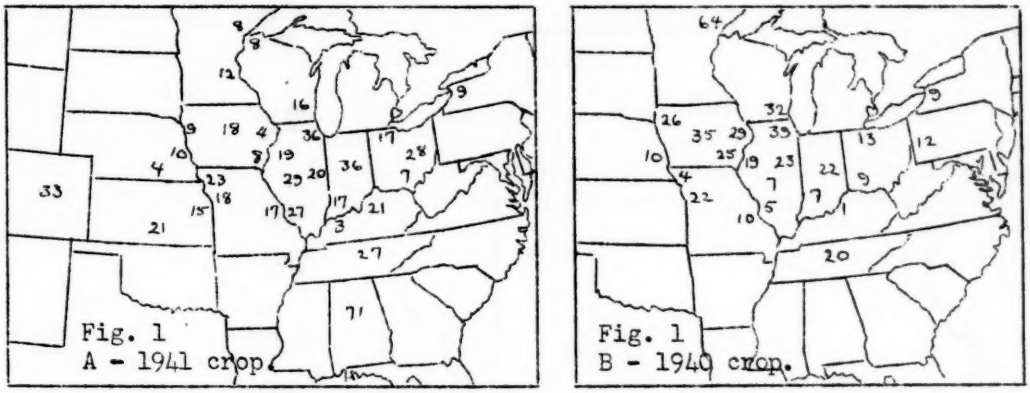


Figure 1. - A. Percentage of cars of shelled corn showing 5% or over total damage. June 1942 receipts, 1941 crop. (For location of markets, see text.)

B. June 1941 receipts, 1940 crop.

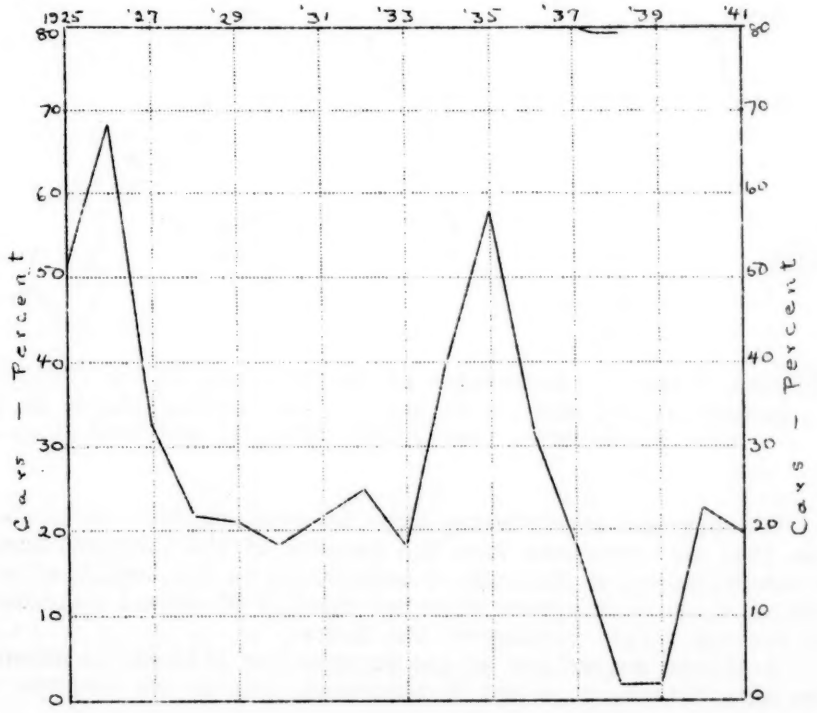


Figure 2. Incidence of corn ear rots in the various crops as indicated by percentage of cars of shelled corn showing 5% or over total damage in June of the following year.

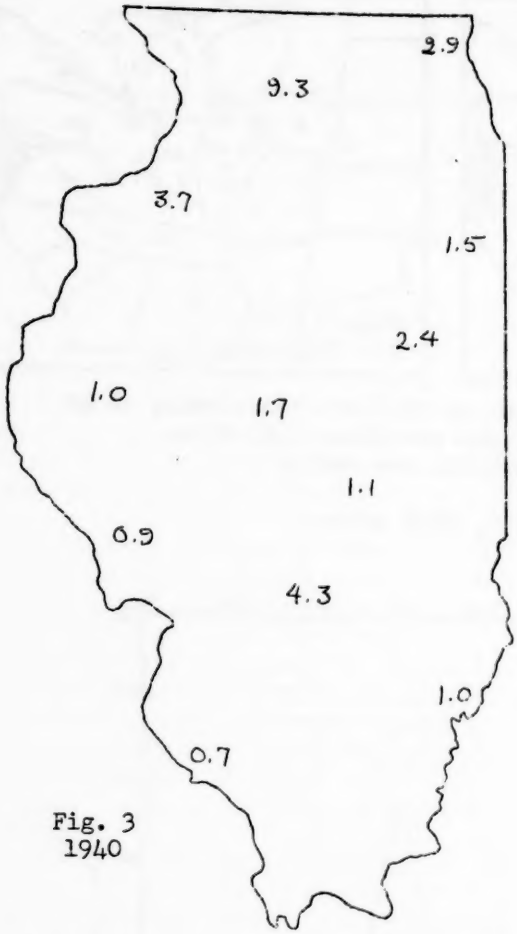


Fig. 3
1940

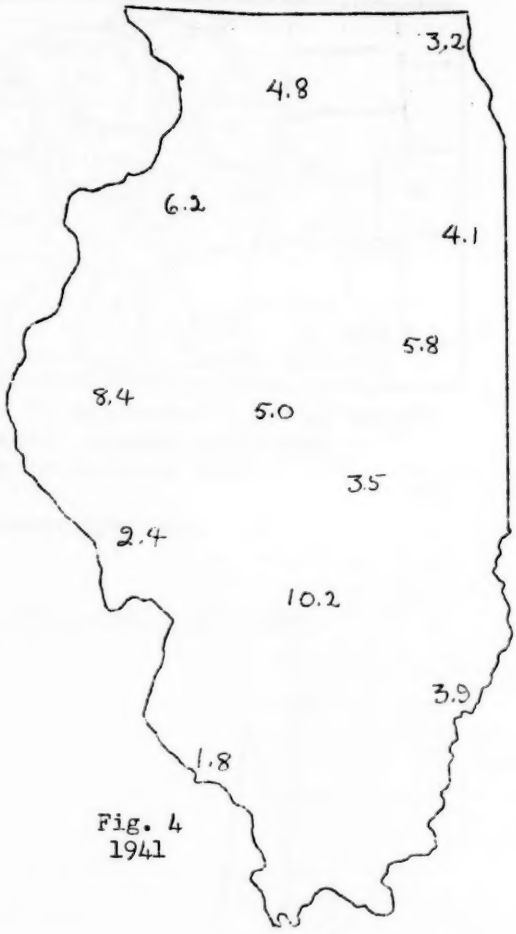


Fig. 4
1941

Figures 3 and 4. Percentage of damaged corn in the shelled samples. Average of all entries at each of the testing fields in Illinois Crop Performance Tests, 1940 (Fig. 3) and 1941 (Fig.4).

The purpose of reviewing this information here is to call attention to the fact that evidence from the reports of the licensed inspections of June corn receipts at Illinois terminals as to the condition of the crop of the previous year agrees with the results of actual measurements of losses in testing fields throughout the State.

A direct comparison of the figures for Illinois terminals as given on the maps (Figure 1, A and B) indicates that on the average corn was

decidedly poorer in quality in 1941 than in 1940.2/ The difference is actually somewhat greater than appears from these figures. Chicago draws corn from a wide area outside Illinois and should not be considered in this connection. Kankakee (1940), and Champaign (1941) handle much smaller volumes than Peoria and Decatur. The actual percentage of all cars showing over 5% total damage at all terminals within Illinois, except Chicago, was approximately 24 in 1941 and 14 in 1940, a ratio almost too close to that between the figures for average kernel damage on the test plots, given above.
(UNIVERSITY OF ILLINOIS).

MISCELLANEOUS NOTES: MOSTLY NORTH DAKOTA

Roderick Sprague

On Diseases of Cereals and Grasses. Root browning (Pythium arrhenomanes) on various cereals and grasses appeared some days later than usual, but developed rapidly in June and even into July. Injury to wheat and barley was severe in west-central North Dakota. The injury to grass seedlings was again heavy, but the cool weather permitted better recovery than in recent years. There was less injury in millets (including proso) in late seeded (June) stands, but pre-emergence blight (P. debaryanum, P. arrhenomanes, etc.) greatly reduced earlier seedings. P. arrhenomanes was isolated from as far west as Pullman, Washington, and even occurred scatteringly in grasses growing in peat bog areas in northern Minnesota. Helminthosporium sativum was not so serious in wheat as in dry years, but was prevalent in early seeded barley and in some grasses, including Stipa viridula.

Root necrosis (mostly Pythium debaryanum) was unusually severe in oats causing from 5 to 10% calculated average reduction in yield in the area. Red leaf in oats was very common and was favored by the cool weather, aphids, and root necrosis.

The honey dew stage of Claviceps purpurea was prevalent in grasses at Mandan, particularly in Poa ampla, P. canbyi, and P. palustris. The yellow bacterial slime disease of Sporobolus was again present at Mandan, and black chaff (Bacterium translucens var. undulosum) was unusually severe on wheat in western North Dakota.

Leaf rust (Puccinia rubigo-vera) is widespread and moderately severe on wheat and grasses in the area, but stem rust (P. graminis) is not yet serious except on a few susceptible wheats and certain species of Agropyron, including A. michnoi at Mandan.

Loose smut (Ustilago nuda) of barley (Hannchen variety) averaged 5 to 10% in the plots on the Mandan Field Station and was relatively abundant throughout North Dakota.

Ustilago bullata Berk. (determined by George W. Fischer) is be-

2/ Copper, R. R., G. H.Dungan, A. L. Lang, J. H. Bigger, Benjamin Koehler, and Oren Bolin; Illinois corn performance tests, 1940. Illinois Agr. Exp. Stat. Bul. 474, pp. 181-182.

ginning to appear in bromes at Mandan, and occurs scatteringly in western South Dakota and Wyoming on Bromus japonicus. Incidentally, Bromus tectorum, rare until now in our area, is this year widely distributed along our main highways and laterals.

On Diseases of Vegetable Crops and Ornamentals. In the local gardens, great difficulty was experienced with pre-emergence rotting of beans (Phaseolus vulgaris, P. lunatus) and cucurbits. Downy mildew (Bremia lactucae) was abundant on the new vegetable celtuce (Lactuca) but not serious after the early season. A great deal of local difficulty was experienced on the Mandan Field Station with a rot of snapdragons, asters, and chrysanthemums. The plants not only damped-off, but later died in the blossoming stage and the roots were rotted away to black stubs. Pythium debaryanum or a related species appears to have been the cause. The condition was particularly severe where snapdragons had been planted out-of-doors in places where hardy chrysanthemums had been grown.
(DIVISION OF CEREAL CROPS AND DISEASES).

CEREAL DISEASES IN NORTH CENTRAL STATES

Henry O. Putnam

We have had a heavy epidemic of scab [Gibberella zeae] in wheat and barley in southwestern Minnesota and eastern South Dakota. Our milling and baking test plots at Morris, Minnesota were sowed in March and they are so badly scabbed that I am afraid there may not be enough crop for our tests. The new North Dakota selections, 2829 and 2822, in our Morris plots seem to have heavier scab than Thatcher or Regent. 2822 carried the heaviest amount. The scab damage also extends into the southern edge of North Dakota.

Dr. J. J. Christensen has plated several barley samples which show almost entirely scab infection.

Scab seems to be more severe on Thatcher, Renown and Regent than on Pilot and Rival. It would seem that their earliness made them more vulnerable to scab this year.

Leaf rust [Puccinia anomala; P. rubigo-vera tritici] is prevalent in the barley and in susceptible wheat varieties in the above area.

Crown rust [P. anomala] has decreased the oat yield in this area but it is much less severe than last year.

Flax rust [Melampsora lini] is severe in many fields from Milbank, South Dakota north into the Red River Valley and west into North Dakota. It is especially severe on Bison but it can easily be found in fields of Redwing and Biwing. Viking seems to be free of it. This will undoubtedly create a demand for rust resistant varieties.

Harvesting of barley and rye has progressed into central North Dakota this week.
(NORTHWEST CROP IMPROVEMENT ASSOCIATION).

SOME FRUIT DISEASES IN PENNSYLVANIA

George L. Zundel

Cherry Viruses: Some of the cherry leaf viruses in this State reported earlier (PDR 26: 261. June 15) have been identified. Specimens of yellow leaves collected in Adams County and sent to Dr. Hildebrand at Cornell were identified by him as cherry yellows. Some of the cherry growers have informed me that this condition has been gradually spreading in the orchards so that in some sections as many as 10 to 15% of the trees have yellow leaves.

Another condition Dr. Hildebrand identified as necrotic ring spot. From recent trips to Adams County I find that this disease is more prevalent in the orchard than I had expected.

Mr. O. S. Cannon has found tatter-leaf of sweet cherry in Erie County and I have found it in Lawrence and Blair Counties. In Blair County I saw one tree with about 100% of the leaves destroyed and they certainly looked tattered. (July 23)

Powdery Mildew on Cherry: Yesterday Dr. Thurston and I drove to Adams County. We found a young unsprayed Montmorency cherry orchard in which probably no less than 99% of the terminal leaves were literally covered with powdery mildew [Podosphaera oryacanthae]. As we went over the county we noted that this fungus was very common where no spraying had been done. I have never seen powdery mildew of cherry so severe. (July 24)

Cylindrosporium Leaf Spot on Red Raspberry: Last week, in Mercer County, while looking over raspberries I found an unusual disease on new red hybrids. The leaves of Newburg and Marcy were heavily covered with a leaf spot that I took for anthracnose, but the spot did not seem characteristic. When specimens were examined by Dr. Overholts, we found that the fungus on the leaf spot was Cylindrosporium rubi Ell. & Morgan. In 14 years this is the first time I have seen this fungus causing widespread damage to raspberry leaves, and according to our records it is the first report from Pennsylvania. I expect that within a short time there will be heavy defoliation. The stems of the variety Marcy were very heavily infected with anthracnose [Elsinoë veneta]. An adjacent patch of the Cuthbert red raspberries did not show either disease. (July 22)

Fire Blight: Fire blight [Erwinia amylovora] has been rather severe in our sprayed apple section. It has been more destructive owing to the fact that the blossom blight stage was very prevalent.

I do not remember ever having seen any figures giving losses caused by fire blight, consequently, I have tried to figure out some way of expressing the loss in percentage. For that reason, I made counts in 2 counties, confining the counts to the blighted blossom clusters. The trees were not picked out especially but taken at random and in all cases except one 100 blossom clusters were counted, taking all on any given limb.

Partial Survey of Blossom Blight on Apple Trees in Central Pennsylvania 1942 - G. L. Zundel

County	Orchardist	Variety	Per Cent Blighted Blossom Clusters
Cumberland	1[a]	York	99
	1	"	80
	1	"	84
	2	Jonathan	80
	3	York	53
Franklin	4	Jonathan	40
	4	"	17
	4	"	57
	5	"	77
	5	"	34
	6	York	97
	6	"	99
	6	Rome	75
	6	"	38
	6	Stayman	73
	7	MacIntosh	50
	7	Gravenstein	50
	8	Jonathan	38
	8	"	46
	8	Rome (young trees)	72
Huntingdon	9	Maiden Blush	95
	9	" "	90
	9	Jonathan	96
	9	"	75

[a] 200 apples counted

The table shows that on the trees examined from 17 to 99% of the blossoms are blighted. No counts were made of any twig blight.

Other observations were made on a number of orchards sprayed in full bloom with the copper spray, and in almost every case where that spray was applied at the proper time, blossom blight was controlled nearly completely. One planting of Bartlett pears in Blair County was almost cleaned out a few years ago, but I started the orchardist with full bloom spray and even in the blight years such as this, the pears have not blighted. Although I did not find any blight in his orchard where copper sprays were applied, some early summer varieties not receiving the copper spray had nearly 95% of the blossom clusters blighted. (July 22)

Brown Rot on Wild Plum: Yesterday I passed through a rather large ornamental planting of Prunus besseyi Bailey full of mature fruit, with from 85 to 95% of the fruit mummied or badly attacked with brown rot, Sclerotinia americana [Monilinia fructicola]. (July 29)

(PENNSYLVANIA STATE COLLEGE).

A LETHAL VIRUS DISEASE OF CANTALOUP OCCURRING IN THE IMPERIAL VALLEY

John T. Middleton and Thomas W. Whitaker

A lethal virus disease of cantaloups, caused by a strain of the cucumber mosaic virus, was first observed this season in the Imperial Valley of California. The symptoms of this disease, which are quite distinct from those of the common cantaloup mosaic prevalent in the region for many years, consist of a sudden dying of the older leaves and subsequent yellowing of the runners; the runners usually collapse 2 to 4 days later. Longitudinally oriented necrotic streaks are often present on the stems of the runners. No mosaic pattern is visible in the older leaves and is only vaguely discernible in the young leaves. In old infected leaves the small veins become necrotic, with little or no necrosis of the surrounding mesophyll tissues. On the other hand, plants affected with the common cantaloup mosaic virus exhibit a very conspicuous mosaic pattern in leaves, do not have necrotic streaks on the stems and only rarely die, and then very gradually.

The disease was reproduced in the greenhouse by inoculating cantaloups with juice taken from yellowed runners from dying plants. Plants inoculated through the cotyledons produced one true leaf and then collapsed. Squash and cucumber were successfully inoculated; the symptoms produced in these plants were similar to those produced by the common cucumber mosaic virus.

The disease was most damaging in 2 early plantings comprising 250 acres. Both of these fields were adjacent to a planting of squash which was subsequently observed to be badly diseased with a strain of the cucumber mosaic virus. Approximately 75% of this acreage was lost; a perceptibly higher percentage adjacent to the squash planting and a smaller percentage away from it. Little trouble was experienced in other cantaloup plantings in the Valley, although there were isolated occurrences of the disease in some of the later plantings.

The cantaloup mosaic virus is seed-borne. Because of the lethal effect of this strain of cucumber virus in cantaloup, the possibility of perpetuation through seed transmission seems remote.

(COLLEGE OF AGRICULTURE, UNIVERSITY OF CALIFORNIA; AND DIVISION OF FRUIT AND VEGETABLE CROPS AND DISEASES, U. S. BUREAU OF PLANT INDUSTRY).

NOTES ON SOME DISEASES OF ORNAMENTALS

Freeman Weiss

Colletotrichum trichellum Fr.) Duke (C. hedericola Laub.) on stems of Hedera helix. This common leaf-spotting organism is only infrequently reported as causing stem lesions. Infection of stems is not mentioned by Duke (Trans. Brit. Myc. Soc. 13:173. 1928) but is said to occur rarely on petioles and branches by Schwarze (New Jersey Agric. Exp. Sta. Bull. 313, p. 106). Several times within recent years specimens of English

ivy have been received for diagnosis that were characterized by extensive stem necrosis, and in some instances the dying out of plants in patches of considerable size was mentioned. These reports always referred to ground beds of ivy, and usually were made in midsummer; therefore winter injury was not suspected. However, examination of specimens at the stage ordinarily received proved unsatisfactory because of the presence of a variety of apparently saprophytic organisms. On June 22, 1942 specimens of this sort were submitted under the descriptive name "stem collapse disease" by Horace Wester of the Office of National Capital Parks. They had been collected in a shady ground bed, in which the plants in large patches appeared to be dying. Some of the leaves bore typical spots caused by Phyllosticta concentrica Sacc., and C. trichellum was sporulating on necrotic areas of others, but a more significant pathological factor was the presence of necrotic lesions on petioles and stems. Some were only a few mm. long but the stem was effectively girdled. In the absence of facilities for tissue isolations, the cause of these lesions could only be inferred from the consistency with which C. trichellum developed on them when specimens were incubated in a moist chamber or when bits of tissue were cut out and kept in water for several days. No other significant organisms were observed. It appears that C. trichellum may cause a serious stem disease as well as a leaf spot of Hedera, for which the name anthracnose is appropriate. The outbreak of the disease in this instance may have been influenced by a protracted period of humid weather, since light precipitation was recorded on 12 days of the 3 weeks preceding the collection and 15 days were cloudy.

Stem canker and foot rot of Vinca minor. In May 1942 specimens of common periwinkle were received which exhibited two apparently distinct diseases. One was a necrosis of limited extent (canker) on shoots of recent growth; the other was a foot rot involving the older stem bases and upper roots, and was characterized usually by the rupture or sloughing off of the cortex. Specimens of the same aspect were obtained from 3 sites in the city of Washington, and from Virginia and Maryland suburbs. The portions of shoots distal to the cankers, or whole plants when attacked by foot rot, were dying. The first specimens received bore Rhizoctonia solani on both types of lesions, which was possibly of no pathological significance although the occurrence of this fungus in connection with diseased Vinca has been reported to the Survey several times. Specimens subsequently obtained bore a pycnidial fungus on the stem bases which corresponds to the alpha conidial stage of Phomopsis lirella Grove but no beta type conidia were observed. The same organism also developed, after incubation, on the cankers on stems. This would indicate that it is definitely parasitic on this host, a fact not mentioned in Grove's original description nor in mycological records of Diaporthe eumorpha (Dur. & Mont.) Maire, its ascigerous stage. However Martin (P.D.R. 13: 60. 1929) attributed a wilt or scorch of Vinca to P. lirella. Phyllosticta minor Ell. & Ev. developed abundantly as a saprophyte on the foliage but not the stems of moribund plants.

Top blight of rhododendron. Phytophthora cactorum caused a severe top blight and in some instances the death of hybrid rhododendrons in Washington, D. C. that were transplanted this year from New Jersey. This is the farthest south that this disease has been recorded in the United States.
(DIVISION OF MYCOLOGY AND DISEASE SURVEY).

REPORTS ON POTATO LATE BLIGHT

MASSACHUSETTS: Late blight [Phytophthora infestans] appeared unusually early in all parts of the State this year. It was observed first on June 26 in Hampshire County. Since then, it has developed slowly in the Connecticut Valley. Field visits in Bristol County on July 2 revealed light scattered infections in most sprayed fields and light to severe infections in unsprayed Irish Cobblers. One field of Cobblers on that date was brown with three-fourths of the plants dead. During the examination of 16 fields in Hampshire and Franklin Counties on July 21, late blight was observed in all but 2. The only really threatening cases were in either unsprayed fields or fields that had been dusted throughout or sprayed only 2 or 3 times. (O. C. Boyd, Massachusetts State College. July 24).

NEW YORK: (County reports from the Weekly News Letter for the dates given).

Nassau Co. -- On July 11 the weather was cool and wet for well over 24 hours, favoring the rapid spread of late blight. Fields that were a healthy green on the 10th were brown with the disease on the 13th. Some growers have put on 2 heavy applications of copper on the same field during this week. Fields that had early fungicide applications appear in good green condition. (R. W. Roth, July 20).

Late blight has severely affected the middle-season and late potatoes on the North Fork. There are few fields without at least one badly blighted area, and some have been attacked so severely that only the stems remain. Many growers have applied as many as 7 copper sprays and still have blight. Complaints are especially numerous against cuprocide dusts and sprays, but there appear to be as many good fields treated with cuprocide as with bordeaux. The indications at present seem to point to poor timing of applications. (J. E. Dewey, July 27).

Suffolk Co. -- The rain of the 12th was very favorable for late blight which spread very rapidly over the weekend. Hot weather this week has done much to hold down further infection. (J. E. Dewey, July 20).

Oswego Co. -- Late blight is present in the county. (L. E. Curtis, July 20).

Wayne Co. -- Late blight has been found in a number of potato fields this week. (W. D. Tyler, July 27).

Orleans Co. -- Blight (Phytophthora) is just showing up, and some early (Alternaria) blight is present. (A. G. West, July 27).

Allegany Co. -- Blight is evident in some fields and has done considerable damage in unsprayed fields. (A. E. Durfee, July 27).

Erie Co. -- Potato late blight was found on July 22 in 2 unsprayed fields. There is some evidence that it exists in other fields and it is probably scattered throughout the southern part of Erie County. (C. F. Crowe, July 27).

Ulster Co. -- Late blight is reported on potatoes throughout the county. (C. G. Small, July 27).

VIRGINIA: Late blight was observed in Wythe County during the week of July 20. Both leaf and tuber infections were found. (S. B. Fenne, Extension Plant Pathologist).

MINNESOTA: Late blight was first noted in Hennepin County by R. C. Rose, extension plant pathologist, about 2 weeks ago. This is more than a month earlier than last year when damage was extensive, especially in eastern and northeastern Minnesota. The disease has now been reported from several sections in southern Minnesota, as far north as Aitkin and west to Kandiyohi County. In Wisconsin where the disease struck earlier many fields are already reported completely destroyed. (News Bureau, University Farm, St. Paul. July 28).

IOWA: Late blight was collected on July 10 near Spirit Lake. The vines in an 8-acre field were very generally diseased. Apparently the disease was first present in June according to growers' observations. A survey on the 11th in 4 counties showed that late blight was prevalent in several fields. There was some late blight in this State in the fall of 1941 and much of the seed purchased in the north showed some diseased tubers. This fact coupled with the cool moist weather from May 20 until now doubtless explains this unusually early presence of the disease this season. Weather permitting, the stage is set for a real epiphytotic. (I. E. Melhus, July 16).

RECENT OBSERVATIONS ON PLANT DISEASES IN MASSACHUSETTS

O. C. Boyd

Asparagus. Rust [Puccinia asparagi] was first observed in the Connecticut Valley July 11 on one of the Washington varieties, and 2 days later on the Paradise variety. In the latter case, moderate to severe infection had occurred earlier in the season in the base of the stems just at and below the ground line, and then resumed activity more or less recently. This same variety on one farm showed considerable loss also as yellow, dying plants due to Fusarium stem rot.

Beans: Halo blight [Phytomonas medicaginis phaseolicola] is giving way now to P. phaseoli blight generally. No severe infections have been observed yet of the latter. A total loss of a field of Black Valentine snap beans was observed in Plymouth County on July 17 from anthracnose [Colletotrichum lindemuthianum]. Later plantings entering bloom showed

considerable stem, leaf and branch infection. Unplanted seed of the same batch revealed about 5% visibly infected seed. On the same farm, there were 2 fields of staked Kentucky Wonder planted in sites where other kinds of crops grew last year. One field, with stakes that were used in a rusted planting of Kentucky Wonder last year, was very heavily rusted, while the other one staked with new poles showed only a trace of rust [Uromyces phaseoli]. Most of the rust pustules, by the way, were whitish, and the spores appeared colorless under the microscope. A few younger pustules on the same leaf were normally reddish-brown. Watery soft rot (Sclerotinia sclerotiorum) is unusually prevalent now in thick plantings in home gardens, both on the branches and the pods.

Cabbage: Yellows [Fusarium conglutinans] is much less pronounced this year in Essex County than at the corresponding date last year.

Carrot: The Cercospora leaf-spot disease of carrots was causing rather severe defoliation in a field in Franklin County along the Connecticut River, on July 18, and was unusually severe in Essex County on July 23 for that time of year. This is somewhat early in the season for the disease. It usually is severe only in the fall crop.

Celery: On July 14, a very severe infection of the small-spotted late blight [Septoria apii-graveolentis] was observed on Summer Pascal in Worcester County, with 2 other varieties growing alongside almost entirely free of the disease. No seed or seed-bed treatment had been given although the field had been dusted a time or two since setting out.

Celtuce: This new vegetable is quite subject to watery soft rot, as leaf infections before stalking and stalk infections later on, according to its behavior in my own garden.

Cucumber: Downy mildew [Pseudoperonospora cubensis] had not appeared in Bristol County on July 1, nor in Hampden County on July 7, in Worcester County on July 14, nor in Plymouth County on July 17. Moreover, a survey of 9 pickle fields in the Connecticut Valley yesterday revealed none whatever. However, bacterial wilt [Erwinia tracheiphila], scab [Cladosporium cucumerinum] and angular leaf spot [Phytomonas lachrymans] were observed in each of the areas on those dates. Anthracnose [Colletotrichum lagenarium]was observed as early as June 23 in a cucumber field in Franklin County where the same crop affected with anthracnose was grown last year. One field out of nine that I examined yesterday showed anthracnose, and it was located where the same crop was raised there in 1941. Scab was causing severe fruit spotting in one side of a field where cucumbers were grown last year, and very light spotting in the remainder of the field where a crop other than a cucurbit was planted in 1941. By this time last year, mosaic [virus] was moderate to severe in many cucumber fields in the Connecticut Valley. It was observed in only one field yesterday, and it was just getting started there. Neither the striped cucumber beetle nor bacterial wilt has been

so prevalent this year as in 1941.

Lettuce: Bottom rot [Corticium solani] was more severe generally this year on the early crop than in most past seasons, but was not pronounced on the later plantings in July. One light case of downy mildew [Bremia lactucae] was observed in Seekonk, Bristol County on July 2.

Onion: In spite of the unusually cool, damp weather in June and July, downy mildew [Peronospora destructor] has not been observed this year. The non-parastic "blast" varies from light to severe on both seed and set onions. Early in July, more than the usual amount of bulb decay in set onions was observed in the Valley crop, starting apparently as a Fusarium basal-plate rot and ending with a bacterial soft rot. The latter type of decay resulted quite commonly following the cutting out of seed stalks, owing perhaps to the unusual amount of wet weather.

Pea: A severe infection of one of the Fusarium wilts was observed in Hampden County on June 25 on light sandy loam soil that had not been planted to peas for 5 or 6 years. In Worcester County on July 14, a field of Telephone peas on rather heavy soil showed a heavy loss from root rot, probably the Aphanomyces rot. The damage in the upper or higher portion of the field was greater by far than that in the lower portion of the field. Judging from reports, root rots generally were very common and damaging this year to pea crops in the State.

Potato (See also under potato late blight): Black leg [Erwinia phytophthora] has been pronounced in Cobblers and Sebago, about normal in other varieties. Leafroll [virus] has been less pronounced this year than it was last year, particularly in Chippewa. Ring rot [Corynebacterium sepedonicum] has not been observed yet in the field, although one infected seed lot (certified) was encountered in the spring when gathering samples for a seed-source test.

Spinach: Downy mildew [Peronospora effusa] was observed in a field in Seekonk, Bristol County, on July 1. The grower stated it had been present throughout the season on all of his plantings.

Tomato: Early blight [Alternaria solani] got started generally around the middle of the month. In Worcester County on July 14, a field of staked tomatoes showed moderate infection half way up the plant. Unsprayed fields in Plymouth County on July 17 showed light to moderate infections on the lower leaves of staked and trellised fields.

Squash: Scab [Cladosporium cucumerinum] has damaged the summer squash crop in the State earlier and more severely this year than in most past seasons. A total loss of a commercial field of transplanted summer squash in Hampden County was observed on June 26, and the grower was then ready to plow up the field. The crop had just reached first harvest, and every leaf and every fruit down to those only 1 1/2 to 2 inches in length

were spotted. The grower had observed crop rotation and use of clean seed bed soil but not seed treatment.

Tobacco: Downy mildew [Peronospora tabacina] is still active on the lower leaves of Havana tobacco, the latest it has ever been observed to remain active in this State, and is higher up on the plants than usual. (MASSACHUSETTS STATE COLLEGE).

BRIEF NOTES ON PLANT DISEASES

WHEAT NEMATODE SPREADING IN SOUTH CAROLINA: The wheat nematode [Anguina tritici] has very definitely become more widespread in South Carolina in the past few years. This year, specimens have been received from the following counties: Oconee, Anderson, Spartanburg, Cherokee, and Lancaster. The Assistant County Agent in Saluda County recently reported to Mr. W. C. Nettles, Extension Plant Pathologist and Entomologist, that the disease was also rather prevalent in that county. Mr. Nettles reports that one mill owner in Oconee County has become so alarmed about the disease that he has arranged to save a sample from every lot of wheat seed milled. Every sample showing the nematodes will be reported to the County Agent who will write the owner a letter that has been prepared in cooperation with Mr. Nettles. (Geo. M. Armstrong, Clemson Agricultural College, July 20).

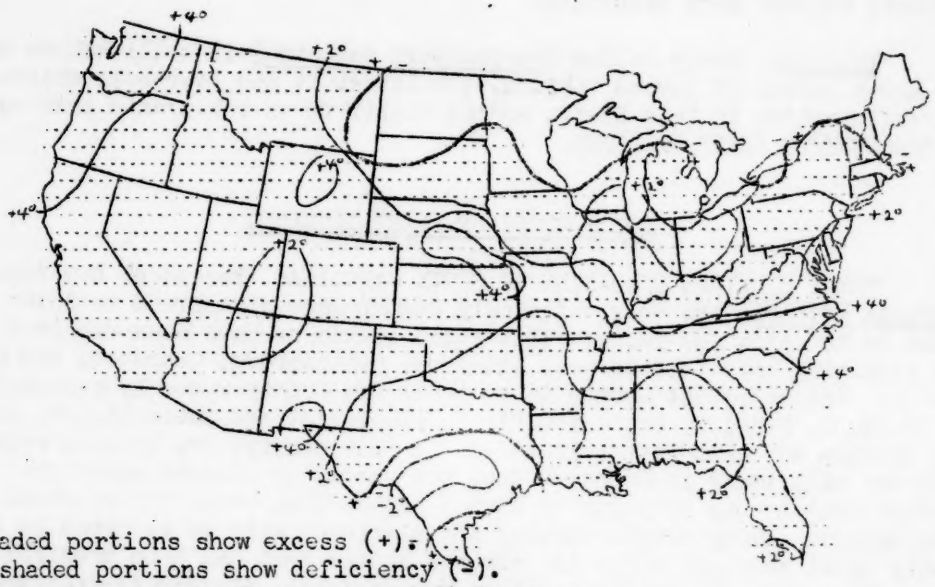
TWO DISEASES ON POPPY IN OREGON: Two diseases were observed on cultivated poppy, Papaver somniferum, in Linn county, Oregon, during the month of July, 1942.

From affected areas on the green pods I secured the bacterial blight organism, Bacterium papavericola, and from a basal stem rot I isolated pure cultures of Sclerotinia sclerotiorum.

The bacterial blight is present in varying amounts annually. (George R. Hoerner, Agent, Division of Drug and Related Plants, Bureau of Plant Industry in Cooperation with Oregon State Agricultural College, July 31).

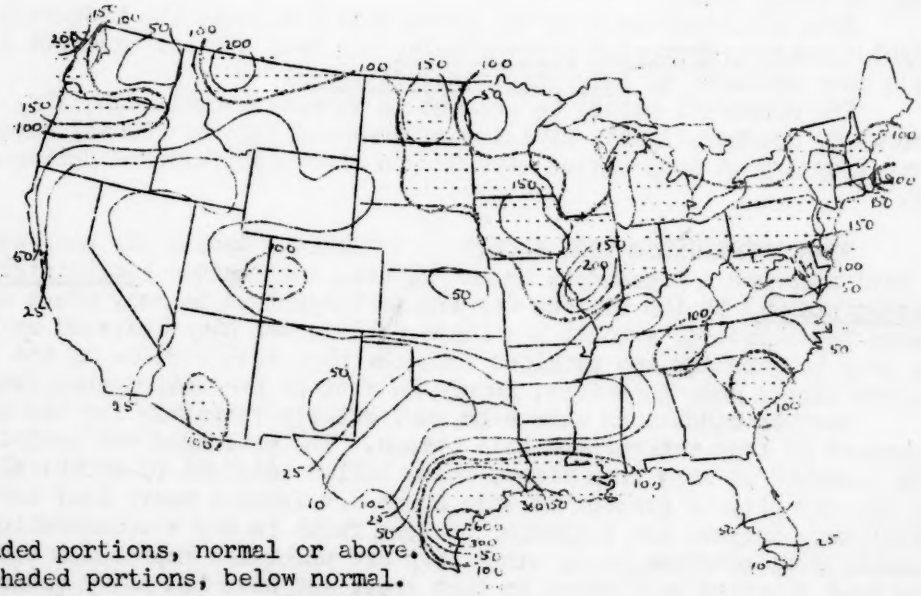
BEAN ANTHRACNOSE VERY SEVERE IN VIRGINIA: During the past season we have observed a tremendous amount of bean anthracnose [Colletotrichum lindemuthianum] in the Victory Gardens of Virginia. In many cases we have traced the source of seed to our State dealers who have informed us that the seed in question was obtained from the high arid regions of the northwestern states and, therefore, should be free of the anthracnose fungus.

Weather conditions have been particularly favorable for the development of bean anthracnose this season. The prolonged wet period in June resulted in many bean plants being killed outright by anthracnose, and the majority of gardens in some areas developed a heavy leaf and pod infection. Growers are beginning to lose faith in our recommendation of planting western-grown seed, since they are under the impression that they have been planting seed grown in that area, yet have had heavy anthracnose infection. (S. B. Fenne, Extension Plant Pathologist, July 27).



Shaded portions show excess (+).
Unshaded portions show deficiency (-).
Lines show amount of excess or deficiency.

Fig. 1. -- Departure of Mean Temperature from the Normal for July 1942



Shaded portions, normal or above.
Unshaded portions, below normal.
Lines show percentage of normal.

Fig. 2. -- Percentage of Normal Precipitation for July 1942